

217/785-1705

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) -- NSPS SOURCE --
REVISED

PERMITTEE

Nufarm Americas, Inc.
Attn: Greg Jones
220 East 17th Street
Chicago Heights, Illinois 60411-3699

Application No.: 04060095	I.D. No.: 031045ABT
Applicant's Designation:	Date Received: July 14, 2014
Subject: Herbicide Production	
Date Issued: September 16, 2014	Expiration Date: February 22, 2016
Location: 220 East 17th Street, Chicago Heights, Cook County, 60411	

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of:

One (1) 10,000 Gallon Esterification Reactor (R501) Controlled by Two
Condensers (HX-501A and HX-501B);
Three (3) Solventless Ester Tanks;
Three (3) Formulation Tanks (V19, R13 and R14);
Two (2) Rotary Mixers (RM2 and RM3) and Fillers Controlled by a Fabric Filter
(Building #2);
Five (5) Liquid Packaging Lines: Express, ELF, SERAC, FEIGE and Tote Filling;
One (1) Amine Reactors (R100) Controlled by Amine Scrubber (SC-1);
Two (2) 10,000 Gallon Amine Reactors (R502 and R522) Controlled by Amine
Scrubber (SC-524);
Two (2) Glyphosate Reactors (R103 and R105) Controlled by a Packed Scrubber
(SC-105);
Tank Truck Loading/Unloading;
Twelve (12) 14,000 Gallon Herbicide Storage Tanks (T401, T402, T403, T407,
T410, T411, T412, T413, T414, T415, V206 and V207);
Two (2) 3,000 Gallon Herbicide Storage Tanks (T404 and T405);
One (1) 6,000 Gallon Herbicide Storage Tank (T406);
One (1) 14,000 Gallon Aromatic Solvent Storage Tank (T408);
One (1) 14,000 Gallon Exxsol D110 Storage Tank (T409);
Two (2) 27,000 Gallon Herbicide Storage Tanks (T416 and T417);
Three (3) 24,000 Gallon Herbicide Storage Tanks (T418, T419, and T420);
One (1) 24,000 Gallon 2-Ethylhexyl Alcohol Storage Tank (T421);
One (1) 10,350 Gallons Herbicide Packaging Tank (T450);
One (1) 5,400 Gallons Herbicide Packaging Tank (T451);
Three (3) 10,600 Gallon Herbicide Storage Tanks (V201, V202 and V205);
Two (2) 16,000 Gallon Herbicide Storage Tanks (V203 and V204);
Four (4) 13,600 Gallon Herbicide Storage Tanks (V208, V209, V210, and V211);
Two (2) 15,000 Gallon Herbicide Storage Tanks (V212 and V213);
One (1) 13,500 Gallon Herbicide Storage Tank (V214);
One (1) 50,000 Gallon MIPA Pressure Storage Tank (T300);
One (1) 30,000 Gallon DMA Pressure Storage Tank (T301);
One (1) 50,000 Gallon Ammonia Storage Tank (T302);

One (1) 21,900 Gallon Herbicide Storage Tank (T440);
One (1) 32,000 Gallon Potassium Hydroxide Storage Tank (T215); and
Two (2) 12.2 mmBtu/hour Natural Gas-Fired Boilers (Johnston Boiler and
Building #2 Boiler)

pursuant to the above-referenced application. This permit is subject to
standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued:
 - i. To limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/yr for Particulate Matter less than 10 microns (PM₁₀) and Volatile Organic Material (VOM), 10 tons/year for any single Hazardous Air Pollutant (HAP) and 25 tons/year for any combination of such HAPs). As a result, the source is excluded from the requirements to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit are described in Attachment A.
 - ii. To limit the potential emissions of VOM from the source to less than 25 tons/year. As a result, the source is excluded from the requirement of 35 Ill. Adm. Code Part 205, Emission Reduction Market System. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
- b. Prior to initial issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes all operating permit(s) for this location.
2. The Johnston boiler and the Building #2 Boiler are subject to New Source Performance Standards (NSPS) for Small Industrial - Commercial - Institutional Steam Generating Units, 40 CFR Part 60, Subparts A and Dc. The Illinois EPA is administering these standards in Illinois on behalf of the United States EPA under a delegation agreement.
- 3a. Pursuant to 35 Ill. Adm. Code 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to 35 Ill. Adm. Code 212.122.
- b. Pursuant to 35 Ill. Adm. Code 212.123(b), the emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 meter (1000 foot) radius from the center point of any other such emission unit owned or operated by such person, and provided further

that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.

- c. Pursuant to 35 Ill. Adm. Code 212.301, no person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally toward the zenith at a point beyond the property line of the source.
- d. Pursuant to 35 Ill. Adm. Code 212.306, all normal traffic pattern access areas surrounding storage piles specified in 35 Ill. Adm. Code 212.304 and all normal traffic pattern roads and parking facilities which are located on mining or manufacturing property shall be paved or treated with water, oils or chemical dust suppressants. All paved areas shall be cleaned on a regular basis. All areas treated with water, oils or chemical dust suppressants shall have the treatment applied on a regular basis, as needed, in accordance with the operating program required by 35 Ill. Adm. Code 212.309, 212.310 and 212.312.
- e. Pursuant to 35 Ill. Adm. Code 212.307, all unloading and transporting operations of materials collected by pollution control equipment shall be enclosed or shall utilize spraying, pelletizing, screw conveying or other equivalent methods.
- f. Pursuant to 35 Ill. Adm. Code 212.308, crushers, grinding mills, screening operations, bucket elevators, conveyor transfer points, conveyors, bagging operations, storage bins and fine product truck and railcar loading operations shall be sprayed with water or a surfactant solution, utilize choke-feeding or be treated by an equivalent method in accordance with an operating program.
- g. Pursuant to 35 Ill. Adm. Code 212.309(a), the emission units described in 35 Ill. Adm. Code 212.304 through 212.308 and 35 Ill. Adm. Code 212.316 shall be operated under the provisions of an operating program, consistent with the requirements set forth in 35 Ill. Adm. Code 212.310 and 212.312, and prepared by the owner or operator and submitted to the Illinois EPA for its review. Such operating program shall be designed to significantly reduce fugitive particulate matter emissions.
- h. Pursuant to 35 Ill. Adm. Code 212.310, as a minimum the operating program shall include the following:
 - i. The name and address of the source;
 - ii. The name and address of the owner or operator responsible for execution of the operating program;
 - iii. A map or diagram of the source showing approximate locations of storage piles, conveyor loading operations, normal traffic pattern access areas surrounding storage piles and all normal traffic patterns within the source;

- iv. Location of unloading and transporting operations with pollution control equipment;
 - v. A detailed description of the best management practices utilized to achieve compliance with 35 Ill. Adm. Code 212 Subpart K, including an engineering specification of particulate collection equipment, application systems for water, oil, chemicals and dust suppressants utilized and equivalent methods utilized;
 - vi. Estimated frequency of application of dust suppressants by location of materials; and
 - vii. Such other information as may be necessary to facilitate the Illinois EPA's review of the operating program.
- i. Pursuant to 35 Ill. Adm. Code 212.312, the operating program shall be amended from time to time by the owner or operator so that the operating program is current. Such amendments shall be consistent with 35 Ill. Adm. Code 212 Subpart K and shall be submitted to the Illinois EPA for its review.
 - j. Pursuant to 35 Ill. Adm. Code 212.321(a), no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in 35 Ill. Adm. Code 212.321(c).
- 4. Pursuant to 35 Ill. Adm. Code 216.121, no person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from each fuel combustion emission source with actual heat input greater than 2.9 MW (10 mmBtu/hour) to exceed 200 ppm corrected to 50 percent excess air.
- 5a. Pursuant to 35 Ill. Adm. Code 218.122(a), no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere during the loading of any organic material from the aggregate loading pipes of any loading area having through-put of greater than 151 cubic meters per day (40,000 gallons/day) into any railroad tank car, tank truck or trailer unless such loading area is equipped with submerged loading pipes or a device that is equally effective in controlling emissions and is approved by the Illinois EPA according to the provisions of 35 Ill. Adm. Code 201, and further processed consistent with 35 Ill. Adm. Code 218.108.
- b. Pursuant to 35 Ill. Adm. Code 218.122(b), no person shall cause or allow the loading of any organic material into any stationary tank having a storage capacity of greater than 946 liters (250 gallons), unless such tank is equipped with a permanent submerged loading pipe or an equivalent device approved by the Illinois EPA according to the provisions of 35 Ill. Adm. Code Part 201, and further processed consistent with 35 Ill. Adm. Code 218.108, or unless such tank is a

pressure tank as described in 35 Ill. Adm. Code 218.121(a) or is fitted with a recovery system as described in 35 Ill. Adm. Code 218.121(b)(2).

- c. Pursuant to 35 Ill. Adm. Code 218.301, no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere from any emission unit, except as provided in 35 Ill. Adm. Code 218.302, 218.303, or 218.304 and the following exception: If no odor nuisance exists the limitation of 35 Ill. Adm. Code 218 Subpart G (Use of Organic Material) shall only apply to photochemically reactive material.
- d. Pursuant to 35 Ill. Adm. Code 218.500(a)(1), the control requirements set forth in Section 218.501 of this Subpart shall apply to process vents associated with batch operations at sources identified by any of the following four-digit standard industrial classification ("SIC") codes, as defined in the 1987 edition of the Federal Standard Industrial Classification Manual: SIC 2821, 2833, 2834, 2861, 2865, 2869, and 2879.
- e. Pursuant to 35 Ill. Adm. Code 218.500(c), the following single unit operations and batch process trains are subject to 35 Ill. Adm. Code 218 Subpart V but are considered to be de minimis and are, therefore, exempt from the control requirements of 35 Ill. Adm. Code 218.501. However, the recordkeeping and reporting requirements in 35 Ill. Adm. Code 218.505 shall apply to such de minimis single unit operations and batch process trains:
 - i. Within a batch operation, any single unit operation with uncontrolled total annual mass emissions of less than or equal to 500 lbs/year of VOM. Such single unit operations are also excluded from the calculation of the total annual mass emissions for a batch process train. If the uncontrolled total annual mass emissions from such exempt single unit operation exceed 500 lbs/year of VOM in any subsequent year, the source shall calculate applicability in accordance with 35 Ill. Adm. Code 218.500(d) for both the individual single unit operation and the batch process train containing the single unit operation; and
 - ii. Any batch process train containing process vents that have, in the aggregate, uncontrolled total annual mass emissions, as determined in accordance with 35 Ill. Adm. Code 218.502(a), of less than 30,000 lbs/year of VOM for all products manufactured in such batch process train.
- 6. This permit is issued based on the source not being subject to the Subpart VVVVVV – National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources. Pursuant to 40 CFR 63.11494 (a), you are subject to 40 CFR 63 Subpart VVVVVV if you own or operate a chemical manufacturing process unit (CMPU) that meets the conditions specified in 40 CFR 63.11494(a)(1) and (2):

- i. The CMPU is located at an area source of hazardous air pollutant (HAP) emissions.
- ii. HAP listed in Table 1 to this subpart (Table 1 HAP) are present in the CMPU, as specified in paragraph (a)(2)(i), (ii), (iii), or (iv) of this section.
 - A. The CMPU uses as feedstock, any material that contains quinoline, manganese, and/or trivalent chromium at an individual concentration greater than 1.0 percent by weight, or any other Table 1 HAP at an individual concentration greater than 0.1 percent by weight. To determine the Table 1 HAP content of feedstocks, you may rely on formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet (MSDS) for the material. If the concentration in an MSDS is presented as a range, use the upper bound of the range.
 - B. Quinoline is generated as byproduct and is present in the CMPU in any liquid stream (process or waste) at a concentration greater than 1.0 percent by weight.
 - C. Hydrazine and/or Table 1 organic HAP other than quinoline are generated as byproduct and are present in the CMPU in any liquid stream (process or waste), continuous process vent, or batch process vent at an individual concentration greater than 0.1 percent by weight.
 - D. Hydrazine or any Table 1 HAP is produced as a product of the CMPU.
- 7. This permit is issued based on Storage Tanks T215, T300, T301, T302, T416, T417, T418, T419, T420, T421, T440, T444, T445, T446, and T447, not being subject to the New Source Performance Standard (NSPS) for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984, 40 CFR 60 Subpart Kb. Pursuant to 40 CFR 60.110b(b), 40 CFR 60 Subpart Kb does not apply to storage vessels with a capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure less than 15.0 kPa.
- 8. Pursuant to 35 Ill. Adm. Code 212.314, 35 Ill. Adm. Code 212.301 shall not apply and spraying pursuant to 35 Ill. Adm. Code 212.304 through 212.310 and 35 Ill. Adm. Code 212.312 shall not be required when the wind speed is greater than 40.2 km/hour (25 mph). Determination of wind speed for the purposes of this rule shall be by a one-hour average or hourly recorded value at the nearest official station of the U.S. Weather Bureau or by wind speed instruments operated on the site. In cases where the duration of operations subject to this rule is less

than one hour, wind speed may be averaged over the duration of the operations on the basis of on-site wind speed instrument measurements.

- 9a. This permit is issued based on the storage tanks at this source not being subject to 35 Ill. Adm. Code 218.120 (Control Requirements for Storage Containers of VOL). Pursuant to 35 Ill. Adm. Code 218.119, the limitations of 35 Ill. Adm. 218.120 shall apply to all storage containers of volatile organic liquid (VOL) with a maximum true vapor pressure of 0.5 psia or greater in any stationary tank, reservoir, or other container of 151 cubic meters (40,000 gallons) capacity or greater, except to vessels as provided below:
- i. Vessels with a capacity greater than or equal to 40,000 gallons storing a liquid with a maximum true pressure of less than 0.5 psia;
 - ii. Pressure vessels designed to operate in excess of 29.4 psia and without emissions to the atmosphere; and
 - iii. Vessels with storage capacity less than 40,000 gallons must comply with 35 Ill. Adm. Code 218.129(f).
- b. Pursuant to 35 Ill. Adm. Code 218.122(c), if no odor nuisance exists the limitations of 35 Ill. Adm. Code 218.122 shall only apply to the loading of VOL with a vapor pressure of 17.24 kPa (2.5 psia) or greater at 294.3°K (70°F).
- c. This permit is issued based on the source not being subject to the control requirements of 35 Ill. Adm. Code 218 Subpart RR (Miscellaneous Organic Chemical Manufacturing Processes). The VOM emissions from the source's process emission units not regulated by 35 Ill. Adm. Code Subparts B, E, F, H, Q, R, S, T, V, X, Y, Z or BB do not exceed the thresholds specified in 35 Ill. Adm. Code 218.960(a)(1)(A) and 35 Ill. Adm. Code 218.960(b)(1)(A) and (B).
10. Pursuant to 40 CFR 60.11(d), at all times, including periods of startup, shutdown, and malfunction, owners and operators shall to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Illinois EPA or USEPA which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
- 11a. In the event that the operation of this source results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in material or installation of controls, in order to eliminate the odor nuisance.

- b. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the vacuum pumps, condensers, carbon canisters, scrubbers, fabric filters, baghouses, dust collectors, and bin vents such that the vacuum pumps, condensers, scrubbers, fabric filters, baghouses, dust collectors, and bin vents are kept in proper working condition and not cause a violation of the Illinois Environmental Protection Act or regulations promulgated therein.
- c. The storage tanks at this source shall only be used to store volatile organic liquids with a vapor pressure not to exceed 0.5 psi unless the tank is a pressure vessels designed to operate in excess of 29.4 psia and without emissions to the atmosphere. The storage of any volatile organic liquid with a vapor pressure greater than 0.5 psi or the storage of a volatile petroleum liquid in a tank that is not a pressure vessel requires that the Permittee first obtain a construction permit from the Illinois EPA and may require performance testing to verify compliance with all applicable requirements.
- d. The Johnston Boiler and the Building #2 Boiler shall only be operated with natural gas as the fuel. The use of any other fuel in either boiler requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
- 12a. Emissions and operation of Building #2 Process equipment shall not exceed the following limits:

i. Production Rates:

<u>Emission Unit</u>	<u>(Tons/Hour)</u>	<u>Production Rate</u>	
		<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
3 Solventless Ester Tanks		4,139	41,391
Formulation Tanks V19, R13, R14		15,330	153,300
Rotary Mixer 2 & Filler	1.35	1,000	11,826
Rotary Mixer 3 & Filler	2.0	1,000	11,826
Express Packaging Line		465,000 Gal	5,475,000 Gal
ELF Packaging Line		465,000 Gal	5,475,000 Gal

ii. Particulate Matter and Volatile Organic Material Emissions:

<u>Emission Unit</u>	<u>E M I S S I O N S</u>			<u>V O M</u>		
	<u>(Lb/Hr)</u>	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>	<u>(lb/Ton)</u>	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>
3 Solventless Ester Tanks	--	--	--	0.0282	0.06	0.58
Formulation Tanks V19, R13, R14	--	--	--	0.00288	0.022	0.22
Rotary Mixer 2 & Filler	3.0	1.1	13.1	--	--	--
Rotary Mixer 3 & Filler	3.7	1.4	16.1	--	--	--
Express Packaging Line	--	--	--	0.0144*	0.004	0.04
ELF Packaging Line	--	--	-----	0.0144*	0.004	0.04
			Totals:	29.2		1.01

* Emission factor Express and ELF Packaging Lines is in units of lbs VOM/10³ gallons of dispersed air.

iii. These limits are based on the maximum hours of operation, the maximum raw material use, and emission factors based on the results of stack testing performed at the source. Particulate matter emissions are based on the allowable emission rates specified by 35 Ill. Adm. Code 212.321.

b. Emissions and operation of Building #3 Process equipment shall not exceed the following limits:

i. Production Rates:

<u>Emission Unit</u>	<u>(Tons/Hour)</u>	<u>Production Rate</u>	
		<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
Amine Reactor R100	9.0	6,700	78,840
Storage Tanks V44, R104		26,000	258,420
Serac Packaging Lines	7,500 gal	5,580,000 gal	65,700,000 gal
FEIDGE Packaging Line	7,470 gal	5,557,680 gal	65,437,200 gal
Tote Packaging Line	6,250 gal	4,650,000 gal	54,750,000 gal

ii. Volatile Organic Material Emissions:

<u>Emission Unit</u>	<u>E M I S S I O N</u>		
	<u>(lb/Ton)</u>	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>
Amine Reactor R100	0.000776	0.031	0.31
Storage Tanks V44, R104	0.000566	0.073	0.73
Serac Packaging Line	0.00783*	0.022	0.26
FEIDGE Packaging Line	0.00783*	0.022	0.26
Tote Packaging Line	0.00783*	0.018	<u>0.21</u>
			2.11

* Emission factor for Packaging Lines is in units of lbs VOM/10³ gallons of dispersed air.

iii. These limits are based on the maximum hours of operation, the maximum raw material use, and emission factors based on the results of stack testing performed at the source. Particulate matter emissions are based on the allowable emission rates specified by 35 Ill. Adm. Code 212.321.

c. Emissions and operation of Building #5 Process equipment shall not exceed the following limits:

<u>Emission Unit</u>	<u>Production Rate</u>		<u>Emission</u>	<u>VOM Emission</u>	
	<u>(ton/mo)</u>	<u>(ton/yr)</u>	<u>Factor</u> <u>(lb/ton)</u>	<u>(lb/mo)</u>	<u>(ton/yr)</u>
Esterification Reactor R501	3,600	36,500	0.011	40	0.20
Amine Reactors R502 and R522	11,000	110,000	0.0027	30	0.15

These limits are based on the maximum operations and emission factors derived from the engineering calculations.

- d. Emissions and operation of the tanks shall not exceed the following limits:

<u>Emission Unit</u>	<u>Throughput</u>		<u>VOM Emissions</u>		
	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>	<u>(lb/Ton)</u>	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>
Esters/Technical Esters Tanks	6,931	69,314	0.0001048	0.01	0.01
Amines Tanks	16,644	166,440	0.0041	0.03	0.34
Glyphosate Tanks	24,090	240,900	0.00374	0.05	0.45
Surfactant Tank (T409)	250	2,500	0.00504	0.01	0.01
MIPA Tank (T300)	3,854	38,544	--	0.01	0.01
DMA Tank (T301)	2,264	22,635	--	0.01	<u>0.01</u>
				Total:	0.83

These limits are based on the maximum hours of operation, the maximum raw material use, and emission factors based on the results of stack testing performed at the source.

- e. Emissions and operation of the Johnston boiler shall not exceed the following limits:

- i. Natural Gas Usage: 10.7 mmscf/month, 107 mmscf/year.
- ii. Emissions from the combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor</u>	<u>Emissions</u>	
	<u>(lbs/mmscf)</u>	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Carbon Monoxide (CO)	84.0	0.45	4.50
Nitrogen Oxides (NO _x)	100.0	0.53	5.35
Particulate Matter (PM)	7.6	0.04	0.41
Sulfur Dioxide (SO ₂)	0.6	0.01	0.03
Volatile Organic Material (VOM)	5.5	0.03	0.29

These limits are based on the maximum fuel usage and standard emission factors (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

- f. Emissions and operation of glyphosate reactors (R103 and R105) shall not exceed the following limits:

- i. Monoisopropylamine (MIPA) usage: 3,854 tons/month and 38,544 tons/year;
- ii. VOM emissions:

<u>Production Rate</u>		<u>VOM Emissions</u>	
<u>(Batches/Month)</u>	<u>(Batches/Year)</u>	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
440	4,400	0.27	2.67

These limits are based on the maximum monoisopropylamine (MIPA) usage, bottom MIPA charge to the reactors, VOM concentration in the reactors discharge no more than 350 ppm, and scrubber efficiency no less than 90%.

- iii. This permit is issued based on negligible emissions of particulate matter from the two glyphosate reactors (R103 and R105). For this purpose emissions from each emission unit shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.
- iv. The above limitations were established in Permit 03110023, pursuant to 35 Ill. Adm. Code Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the Clean Air Act, specifically 35 Ill. Adm. Code Part 203.
- g. Emissions and operation of the tanks shall not exceed the following limits:

<u>Emission Unit</u>	<u>Throughput</u>		<u>VOM Emissions</u>	
	<u>(Gal/Mo)</u>	<u>(Gal/Yr)</u>	<u>(Ton/Mo)</u>	<u>(Ton/Yr)</u>
Tank T302 (28% Ammonia)	535,000	5,350,000	0.01	0.01
Tank T440	470,000	4,700,000	0.01	0.06
Tank T215	555,000	5,550,000	0.01	0.01
Tank T408	535,000	5,350,000	0.01	0.01
Tank T450	500,000	4,930,000	0.01	0.02
Tank T451	500,000	4,930,000	0.01	0.01
			Total:	0.12

These limits are based on the maximum throughput of the tanks and standard emission factors and formulas (Section 7.1, AP-42, Fifth Edition, Volume I, November 2006 or TANKS Emissions Estimation Software, Version 4.09D, October 5, 2006).

- h. Emissions and operation of the Building #2 boiler shall not exceed the following limits:

<u>Pollutant</u>	<u>Emission Factor</u>	<u>Emissions</u>	
	<u>(Lbs/mm scf)</u>	<u>(Lbs/Hr)</u>	<u>(Tons/Yr)</u>
Carbon Monoxide (CO)	84.0	1.02	4.49
Nitrogen Oxides (NO _x)	100.0	1.22	5.34
Particulate Matter (PM)	7.6	0.09	0.41
Sulfur Dioxide (SO ₂)	0.6	0.01	0.03
Volatile Organic Materials (VOM)	5.5	0.07	0.29

These limits are based on the maximum firing rate the boiler (12.2 mmBtu/hour), the maximum operating hours of 8760 hours/year, and standard emission factors (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

13. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act from the source shall not exceed 0.9 tons/month and 9.0 tons/year of any single HAP and 2.25 tons/month and 22.5 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a CAAPP permit from the Illinois EPA.
14. Compliance with the annual limits of this permit shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- 15a. Pursuant to 35 Ill. Adm. Code 201.282, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:
 - i. Testing by Owner or Operator. The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. The Illinois EPA may adopt procedures detailing methods of testing and formats for reporting results of testing. Such procedures and revisions thereto, shall not become effective until filed with the Secretary of State, as required by the APA Act. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests.
 - ii. Testing by the Illinois EPA. The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary.
- b. Testing required by Conditions 15 and 16 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
16. Pursuant to 35 Ill. Adm. Code 212.110(c), upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate

compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA.

- 17a. Pursuant to 40 CFR 60.7(b), any owner or operator subject to the provisions of 40 CFR Part 60 shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.
- b. Pursuant to 40 CFR 60.7(f), any owner or operator subject to the provisions of 40 CFR Part 60 shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by 40 CFR Part 60 recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records.
- 18a.
 - i. Pursuant to 40 CFR 60.48c(g)(1), except as provided under 40 CFR 60.48c(g)(2) and (g)(3), the owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each operating day.
 - ii. Pursuant to 40 CFR 60.48c(g)(2), as an alternative to meeting the requirements of 40 CFR 60.48c(g)(1), the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in 40 CFR 60.48c(f) to demonstrate compliance with the SO₂ standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.
 - iii. Pursuant to 40 CFR 60.48c(g)(2), as an alternative to meeting the requirements of 40 CFR 60.48c(g)(1), the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to 40 CFR 60 Subpart Dc) at that property are natural gas, wood, distillate oil meeting the most current requirements in 40 CFR 60.42c to use fuel certification to demonstrate compliance with the SO₂ standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.

- b. Pursuant to 40 CFR 60.48c(i), all records required under 40 CFR 60.48 shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.
- 19a. Pursuant to 40 CFR 60.116b(a), the owner or operator shall keep copies of all records required by 40 CFR 60.116b, except for the record required by 40 CFR 60.116b(b), for at least 2 years. The record required by 40 CFR 60.116b(b) will be kept for the life of the source.
- b. Pursuant to 40 CFR 60.116b(b), the owner or operator of each storage vessel as specified in 40 CFR 60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.
 - c. Pursuant to 40 CFR 60.116b(c), except as provided in 40 CFR 60.116b(f) and (g), the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.
20. Pursuant to 40 CFR 63.10(b)(3), if an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants regulated by any standard established pursuant to Section 112(d) or (f) of the Clean Air Act, and that stationary source is in the source category regulated by the relevant standard, but that source is not subject to the relevant standard (or other requirement established under 40 CFR Part 63) because of limitations on the source's potential to emit or an exclusion, the owner or operator must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the owner or operator believes the source is unaffected (e.g., because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the USEPA and/or Illinois EPA to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis must be performed in accordance with requirements established in relevant subparts of 40 CFR Part 63 for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with USEPA guidance materials published to assist sources in making applicability determinations under Section 112 of the Clean Air Act, if any. The requirements to determine applicability of a standard under 40 CFR 63.1(b)(3) and to record the results of that determination under 40 CFR

63.10(b)(3) shall not by themselves create an obligation for the owner or operator to obtain a Title V permit.

21. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.
- 22a. Pursuant to 35 Ill. Adm. Code 218.129(f), the owner or operator of each storage vessel specified 35 Ill. Adm. Code 218.119 shall maintain readily accessible records of the dimension of the storage vessel and an analysis of the capacity of the storage vessel. Each storage vessel with a design capacity less than 40,000 gallons is subject to no provisions of 35 Ill. Adm. Code Part 218 other than those required by maintaining readily accessible records of the dimensions of the storage vessel and analysis of the capacity of the storage vessel.
- b. Pursuant to 35 Ill. Adm. Code 218.505(a), every owner or operator of a de minimis single unit operation or batch process train exempt under 35 Ill. Adm. Code 218.500(c)(1) or (c)(2) shall keep records of the uncontrolled total annual mass emissions for any de minimis single unit operation or batch process train, as applicable, and documentation verifying these values or measurements. The documentation shall include the engineering calculations, any measurements made in accordance with 35 Ill. Adm. Code 218.503, and the potential or permitted number of batch cycles per year, or, in the alternative, total production as represented in the source's operating permit.
- c. Pursuant to 35 Ill. Adm. Code 218.505(b), every owner or operator of a single unit operation exempt under 35 Ill. Adm. Code 218.500 (b) (3) or (d) shall keep the following records:
 - i. The uncontrolled total annual mass emissions and documentation verifying these values or measurements. The documentation shall include any engineering calculations, any measurements made in accordance with 35 Ill. Adm. Code 218.503, and the potential or permitted number of batch cycles per year, or, in the alternative, total production as represented in the source's operating permit.
 - ii. The average flow rate in scfm and documentation verifying this value.
- d. Pursuant to 35 Ill. Adm. Code 218.505(d), every owner or operator of a single unit operation claiming a vent stream concentration exemption level, as set forth in 35 Ill. Adm. Code 218.500(d)(1), shall maintain records to indicate the vent stream concentration is less than or equal to 500 ppmv.
- e. Pursuant to 35 Ill. Adm. Code 218.505(h), every owner or operator of a batch operation required to keep records under 35 Ill. Adm. Code

218.505 shall maintain such records at the source for a minimum period of three years and shall make all such records available to the Illinois EPA upon request.

23a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:

- i. Records addressing use of good operating practices for the vacuum pumps, condensers, carbon canisters, scrubbers, fabric filters, baghouses, dust collectors, and bin vents:
 - A. Records for periodic inspection of the vacuum pumps, condensers, carbon canisters, scrubbers, fabric filters, baghouses, dust collectors, and bin vents with date, individual performing the inspection, and nature of inspection; and
 - B. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
- ii. The names and amounts of raw materials used (lbs/batch) and number of batches;
- iii. The name, identification number and amount (tons/month and tons/year) of each raw material used and their VOM and HAP content (weight %);
- iv. The name and production rate (tons/month and tons/year) of each type of product;
- v. MIPA usage (tons/month and tons/year);
- vi. Tank throughput (gallons/month and gallons/year);
- vii. Natural gas usage (mmscf/month and mmscf/year); and
- viii. Monthly and annual CO, NO_x, PM, SO₂ VOM and HAP emissions from the source with supporting calculations (tons/month and tons/year).
- b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer storage device) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.

24a. Pursuant to 40 CFR 60.7(a), any owner or operator subject to the provisions of 40 CFR Part 60 shall furnish the Illinois EPA or USEPA written notification or, if acceptable to both the Illinois EPA and

USEPA and the owner or operator of a source, electronic notification, as follows:

- i. A notification of the date construction (or reconstruction as defined under 40 CFR 60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.
 - ii. A notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.
 - iii. A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in 40 CFR 60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Illinois EPA or USEPA may request additional relevant information subsequent to this notice.
- b. Pursuant to 40 CFR 60.48c(a), the owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup, as provided by 40 CFR 60.7. This notification shall include:
- i. The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.
 - ii. If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under 40 CFR 60.42c, or 40 CFR 60.43c.
 - iii. The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.
- c. Pursuant to 40 CFR 60.48c(j) the reporting period for the reports required under this 40 CFR 60 Subpart Dc is each six-month period. All reports shall be submitted to the Illinois EPA or USEPA and shall be postmarked by the 30th day following the end of the reporting period.
25. Pursuant to 35 Ill. Adm. Code 212.110(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.

- 26a. Pursuant to 35 Ill. Adm. Code 218.505(d), every owner or operator of a single unit operation claiming a vent stream concentration exemption level, as set forth in 35 Ill. Adm. Code 218.500(d)(1), shall notify the Illinois EPA in writing if the vent stream concentration at any time equals or exceeds 500 ppmv, within 60 days after such event. Such notification shall include a copy of all records of such event.
- b. Pursuant to 35 Ill. Adm. Code 218.505(g), the owner or operator of a de minimis single unit operation or batch process train exempt from the control requirements of 35 Ill. Adm. Code 218.500(c) shall notify the Illinois EPA in writing if the uncontrolled total annual mass emissions from such de minimis single unit operation or batch process train exceed the threshold in 35 Ill. Adm. Code 218.500(c)(1) or (c)(2), respectively, within 60 days after the event occurs. Such notification shall include a copy of all records of such event.
- c. Pursuant to 35 Ill. Adm. Code 218.990, upon request by the Illinois EPA, the owner or operator of an emission unit which is exempt from the requirements of 35 Ill. Adm. Code 218 Subparts PP, QQ, RR, TT or 35 Ill. Adm. Code 218.208(b) shall submit records to the Illinois EPA within 30 calendar days from the date of the request that document that the emission unit is exempt from those requirements.
- 27a. If there is an exceedance of or a deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance or deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.
- b. Two (2) copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

It should be noted that this permit has been revised to include operation of one Esterification Reactor (R501) and two Amine Reactors (R502 and R522)

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described in Construction Permit 14070015 and no longer include operation of Esterification Reactor (R12) and Amine Reactors R101 and R102.

If you have any questions on this permit, please call Valeriy Brodsky at 217/785-1705.

Raymond E. Pilapil
Acting Manager, Permit Section
Division of Air Pollution Control

Date Signed: _____

REP:VJB:jws

cc: Illinois EPA, FOS Region 1

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from the Herbicide Production source operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels, (e.g., 100 tons/year for PM₁₀ and VOM, 10 tons/year for any single HAP, and 25 tons per year for any combination of such HAP) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, and control measures are more effective than required in this permit.

<u>Emission Unit</u>	<u>E M I S S I O N S (Tons/Year)</u>						<u>Total HAPs</u>
	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO₂</u>	<u>VOM</u>	<u>Single HAP</u>	
Esterification Reactor R501					0.20		
3 Solventless Ester Tanks					0.58		
Formulation Tanks V19, R13, R14					0.22		
Rotary Mixer 2 & Filler			13.10				
Rotary Mixer 3 & Filler			16.10				
Express Packaging Room					0.04		
ELF Packaging Room					0.04		
Amine Reactor R101					0.31		
Amine Reactors R502 and R522					0.15		
Storage Tank V44					0.73		
Serac Packaging Line					0.26		
FEIDGE Packaging Line					0.26		
Tote Packaging Line					0.21		
Esters/Technical Esters Tanks					0.01		
Amines Tanks					0.34		
Glyphosate Tanks					0.45		
Surfactant Tank (T409)					0.01		
MIPA Tank (T300)					0.01		
DMA Tank (T301)					0.01		
Johnston Boiler	4.50	5.35	0.41	0.03	0.29		
Glyphosate Reactors R103			0.44		0.47		
Glyphosate Reactors R105			0.88		2.20		
MIPA Tank T300					0.01		
DMA Tank T301					0.01		
Tank T302					0.01		
Tank T440					0.06		
Tank T215					0.01		
Tank T408					0.01		
Tank T450					0.02		
Tank T451					0.01		
Building #2 Boiler	4.49	5.34	0.41	0.03	0.29	-----	-----
Totals	8.99	10.59	31.34	0.06	7.22	9.0	22.5